

SUPPORT FOR THE AMENDMENTS

Claims 2-4, 14, and 15 were previously canceled.

Claim 1 has been amended.

The amendment of Claim 1 finds support in previously pending Claim 1 and the specification at page 8, lines 1-3, as well as dispersant 4 and dispersant 5 in the Examples (see page 12, lines 10-14).

No new matter has been added by the present amendment.

REMARKS

Claims 1, 5-13, and 16-22 are pending in the present application.

At the outset, Applicants note that on page 2, paragraph 2, of the Office Action mailed February 21, 2008, the Examiner alleges that “the showing of a molecular weight of 12 00 0 g/mol as disclosed in the Siemensmeyer declaration is indicative of new matter as there seems to be no literal basis for a molecular weight of 12 000 g/mol in the original specification.” Applicants are confused by this indication as the data points that are used in an evidentiary declaration need not have literal support in the specification. Indeed, since the evidentiary declaration is not an amendment to the specification or claims these data points can not present “new matter.”

The rejections of: **(a)** Claims 5 and 7 under the doctrine of obviousness double patenting over Claims 1-2 and 5-6 Herrmann et al (US 6,607,565) in view of Mischke et al (US 5,508,389), **(b)** Claims 1, 5-12, and 16-22 under 35 U.S.C. §103(a) over Herrmann et al (US 6,607,565) in view of Mischke et al (US 5,508,389) or Buhler et al (PCT/EP01/07136), **(c)** Claims 1, 5-12, 16-17, and 19-22 under 35 U.S.C. §103(a) over Siegel et al (US 6,117,224) in view of Mischke et al (US 5,508,389) or Buhler et al (PCT/EP01/07136), **(d)** Claims 1, 5-12, and 16-22 under 35 U.S.C. 103(a) over Kazuo et al (JP 05-255626) in view of Herrmann et al (US 6,607,565) and Mischke et al (US 5,508,389) or Buhler et al (PCT/EP01/07136), and **(e)** Claim 13 under 35 U.S.C. §103(a) over Herrmann et al or Kazuo et al in view of Mischke et al or Buhler et al and further in view of Siemensmeyer et al (U.S. 6,537,331) are respectfully traversed.

Applicants submit that, as is recognized by the Examiner, neither Herrmann et al nor Siegel et al disclose a composition that includes component B with an average molecular weight of at least 11 000 g/mol. The Examiner cites Mischke et al and Buhler et al as allegedly solving this deficiency.

Mischke et al is cited as allegedly disclosing that dispersants from a condensation product of naphthalenesulfonic acid and formaldehyde with a molecular weight of 350 to 35,000 are well known. While Buhler et al is cited as allegedly disclosing additives such as anionic dispersants from a condensation product of naphthalenesulfonic acid and formaldehyde with a molecular weight of 1000 to 100,000 are well known. Siemensmeyer et al disclose a dye preparation with the azo dye of formula (III), but this does not compensate for the deficiencies in any of the cited references.

Putting aside Applicants prior arguments as to non-analogous art and the lack of combinability of the references, Applicants submit that the combination of references fails to support a case of obviousness with respect to the claimed invention. Specifically, the references fail to disclose or suggest the superior advantages flowing from the specifically claimed molecular weight range of the condensation product of 11,000 g/mol to 18,000 g/mol. Applicants submit that it is more than a mere optimization to choose a molecular weight range of the condensation product of 11,000 g/mol to 20,000 g/mol. This is especially true as Mischke et al only disclose a very broad range of from 350 to 35000 g/mol and Buhler et al disclose a range of 1000 to 100,000 g/mol, and do not suggest the suitability of the condensation products as dispersants for water-insoluble disperse dyes free of ionic groups.

To further evidence the advantages flowing from the specifically claimed molecular weight range of the condensation product of 11,000 g/mol to 18,000 g/mol, Applicants submitted a Declaration under 37 C.F.R. §1.132 executed by Dr. Karl Siemensmeyer (the

Siemensmeyer Declaration) on December 21, 2007. In the Siemensmeyer Declaration, experiments were performed using a naphthalenesulfonic acid-formaldehyde condensation product having an average molecular weight of 12 000 g/mol.

In Example 1 of the Siemensmeyer Declaration, the dispersing properties of the naphthalenesulfonic acid-formaldehyde condensation product having an average molecular weight of 12 000 g/mol (= dispersant 6) was determined by a grinding test, similar to Example 6 of the present application which used dispersant 4 having an average molecular weight of 16 000 g/mol (see page 12, lines 10-12 and page 14, line 13 to page 15, line 4 of the specification). The grinding test yielded similar good results as for dispersant 4, having a molecular weight of 16 000 g/mol. After aging of the concentrate at 60 °C for 3 days, minimal particle growth was observed.

In Example 2 of the Siemensmeyer Declaration, an ink was produced from the concentrate of Example 1, and the ink obtained was printed by an EPSON 3000 Stylus Color Piezo head printer, in the manner of Example 8 of the present application (see page 15, lines 18-30). Similar good results were obtained with the ink of Example 2 of the Siemensmeyer Declaration, as compared to the ink produced according to Example 8 of the present application. Similar good results as for dispersant 4 used in Example 8 of the application were obtained. Accordingly, the prints obtained had excellent line crispness, there was no nozzle failure in sustained use, and the flow properties of the ink were excellent. After aging of the ink at 60 °C for 5 days, minimal separation of disperse dye from the dispersion and particle growth were observed.

Thus, Examples 1 and 2 of the Siemensmeyer Declaration show that dispersant 6 having an average molecular weight of 12 000 g/mol has similar good dispersing properties than dispersant 4 in the present specification having an average molecular weight of 16 000

g/mol. Therefore, Applicants submit that the claimed invention is not obvious in view of the combined disclosures of Siegel et al, Hermann et al, Kazuo et al, Mischke et al, Buhler et al and Siemensmeyer et al.

In the Office Action the Examiner disregards the evidentiary showing in the specification and Siemensmeyer Declaration alleging: “the showing of unexpected result[s] is not commensurate with the instant claimed molecular weight range of 11 000 to 20 000 g/mol.”

The Examiner is correct that evidence to rebut a *prima facie* case of obviousness must be reasonably commensurate in scope with the claimed invention. However, when considering whether proffered evidence is commensurate in scope with the claimed invention, the Examiner should not require the applicant to show unexpected results over the entire range of properties possessed by a chemical compound or composition. See, e.g., *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Similarly, a showing of unexpected results for a single member of a claimed subgenus, or a narrow portion of a claimed range would be sufficient to rebut a *prima facie* case of obviousness if a skilled artisan “could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value thereof.” *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980)

In *In re Clemens*, the claims were directed to a process for removing corrosion at “elevated temperatures” using a certain ion exchange resin (with the exception of claim 8 which recited a temperature in excess of 100°C. Appellant demonstrated unexpected results via comparative tests with the prior art ion exchange resin at 110°C and 130°C. The court affirmed the rejection of claims 1-7 and 9-10 because the term “elevated temperatures” encompassed temperatures as low as 60°C where the prior art ion exchange resin was known

to perform well. Importantly, the rejection of claim 8, directed to a temperature in excess of 100°C, was reversed. The reversal of the rejection of claim 8 did not require an explicit showing of experimental data at 100°C, but rather the skilled artisan could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value of that data to 100°C. (see also *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979)).

This is very much the situation presented in the present application. Specifically, the claims currently recite a molecular weight range of 11,000 g/mol to 18,000 g/mol. The experimental data in the specification and the Siemensmeyer Declaration are at 12,000 g/mol, 16,000 g/mol, and 18,000 g/mol, which represented approximately 86% of the claimed range, and are sufficient to rebut a *prima facie* case of obviousness as the skilled artisan “could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value thereof.” More precisely, Applicants submit that with the data in experimental data in hand at 12,000 g/mol, 16,000 g/mol, and 18,000 g/mol, the skilled artisan would have reasonably extended the exemplified trend to a dispersant having a molecular weight of 11,000 g/mol as the difference between this molecular weight and the lowest exemplified molecular weight is less than 10% and the skilled artisan would appreciate that this difference is not sufficient for the properties of the macromolecule to abruptly drop off. On the other hand, looking at dispersant 3 having an average molecular weight of 9 000 g/mol (a molecular weight of 25% of the lowest exemplified molecular weight) shows that the tainting and grinding effects diminish as compared to the claimed invention.

In view of the foregoing, Applicants submit that the experimental data in the specification and the Siemensmeyer Declaration are commensurate in scope with the claimed invention. Further, on the basis of this evidentiary showing, Applicants submit that the

obviousness rejection has been sufficiently rebutted. As such, Applicants submit that the claimed invention is not obvious in view of the combined disclosures of Siegel et al, Hermann et al, Kazuo et al, Mischke et al, Buhler et al and Siemensmeyer et al.

In view of the foregoing, withdrawal of these grounds of rejection is requested.

Applicants submit that the present application is in condition for allowance. Early notification to this effect is respectfully requested.

Respectfully submitted,

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